

### **Remarks/Arguments**

#### **Amendments to the Claims**

The claim amendments and the new claims are fully supported by the instant application.

The recitation in Claims 2 and 23-25 of: "wherein the stiffening ring is joined to the inner circumferential edge of the base ring (2) or the outer circumferential edge of the base ring (2) in a firm or form-locking manner" and new Claim 28 are supported by page 7, lines 11 through 16 of the instant specification.

Claim 29 is supported by page 7, lines 11 through 16 of the instant specification and the fact that Claim 2 recites the stiffening ring and the protective layer as being produced of a single piece of material.

No new matter has been added.

#### **The Rejection of Claims 2-4, 7-9, 11-13, 15, and 23-27 Under 35 U.S.C. §103(a)**

The Examiner rejected Claims 2-4, 7-9, 11-13, 15, and 23-27 under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 2,859,061 (Reid) in view of United States Patent No. 3,531,133 (Sheesley). Applicants respectfully traverse the rejection.

#### **Claim 2**

##### **Reid does not join the stiffening ring to the core**

Amended Claim 2 recites: "wherein the stiffening ring is joined to the inner circumferential edge of the base ring (2) or the outer circumferential edge of the base ring (2) in a firm or form-locking manner"

The Examiner cited lips 16, which are part of covering 18, of Reid as teaching the stiffening ring recited in Claim 2. Assuming *arguendo* that lips 16 of Reid are analogous to the stiffening ring recited in Claim 2, Reid does not teach joining the lips to core 17. For example, regarding the equivalent configuration shown in Figures 1 and 2, Reid explicitly discloses: "the covering completely encloses the core, *but is not sealed or bonded to the core.*" (emphasis added) (col. 4, lines 46 and 47). Further: "This sealing is effected without sealing to the core that

portion of the covering 3 which conforms to the cross sectional shape of the core.” (col. 4, lines 55-58). Reid further teaches sealing lips 16 as taught for the ring in Figure 1 (col. 6, lines 38-40). Reid teaches against joining the stiffening ring to the core

As noted above, Reid teaches that the cover (including the sealing lips) is not to be sealed or bonded to the core, which is the opposite of the configuration recited in Claim 2.

“A *prima facie* case of obviousness can be rebutted if one of the cited references teaches away from the claimed invention. See *In re Geisler*, 43 U.S.P.Q. 2d 1362, 1366 (Fed. Cir. 1997).”

The configuration of Claim 2 has advantages with respect to Reid

A sealing ring according to Reid includes core 2 or 17 made of an elastic and resilient rubber-like material, for example, an elastically deformable O-ring (col. 4, lines 32 and 33), which is entirely covered by covering 3 or 17 (which includes lips 4 or 16), which is made of a tougher and less elastic material than the core material (col. 4, lines 37-39), for example, a polytetrafluoroethylene (PTFE) sheath (col. 3, lines 69-71). As noted above, Reid explicitly teaches that the cover and the core are not to be joined together. Thus, the cover (including the sealing lips) and the core are discrete and separate elements, which are not joined together in any manner and which are displaceable with respect to each other, unlike the configuration of base ring and stiffening ring recited in Claim 2. Reid’s configuration of core and lips results in numerous detrimental effects upon the sealing ring during compression of the sealing ring, including, but not limited to:

1. Upon compression of the sealing ring, differential elastic deformation and subsequent differential displacement, of the core, sealing lips, and cover can result in the formation of folds or bends in the respective materials, causing damage, in particular, to the cover, and subsequent degradation or failure of the sealing ring. The joining of the base ring and the stiffening ring (which is integral to the protective layer) as recited in Claim 2 prevents or minimizes such differential displacement and subsequent folds or bends.
2. When Reid’s sealing ring is compressed by a rotary motion about a central axis of the sealing ring, for example, as would occur for use of the ring with threaded joints of valve

bodies in pipelines or pump casings, the core, stiffening ring, and covering can rotationally shift with respect to one another, resulting in damage to the components of the sealing ring and failure of the sealing ring. The joining of the base ring and the stiffening ring (which is integral to the protective layer) as recited in Claim 2 prevents or minimizes such shifting and damage.

Other previously cited prior art does not teach, suggest, or motivate a stiffening ring connected to the base ring

U.S. Patent No. 2,580,546 (Hobson Jr.) does not teach, suggest, or motivate a stiffening ring. Hobson teaches a PTFE jacket partially surrounding a core, in fact, the patent is titled “Jacketed Gasket.” Assuming *arguendo* that Hobson’s jacket is analogous to the protective coating recited in Claim 2, Hobson does not teach, suggest, or motivate joining the jacket to the core. In fact, Hobson teaches against such joining. For example, Hobson teaches that adhering the jacket to the core is not necessary since the parts are dimensioned for a snug fit (col. 5, lines 1-5). The only adhesion Hobson teaches is for the folded back portions of the jacket shown in Figures 3 and 4 (col. 5, lines 5-11) or securing the ends of PTFE tape that has been wound about the core (col. 4, lines 71-73).

All the teachings of Hobson refer to a jacket or an envelope (col. 3, line 18), or to jacketing the core. The common and well-understood meaning of a jacket or envelope, or jacketing is that the jacket or envelope is not joined to the object being jacketed or enveloped. Hobson teaches that the jacket ‘embraces’ the upper and lower faces of the core (col. 1, lines 28-33; and col. 4, lines 55 and 56), not that the jacket adheres to the faces. This ‘non-connection’ of the jacket and core is further reinforced and taught by various embodiments of Hobson’s, for example, Figures 3 and 4 teach folding the jacket to hold the jacket in place. Further, the materials taught by Hobson are not conducive to joining of the core and jacket. For example, in Figure 2, layer 11, in contact with the jacket, is woven asbestos, a material that does not lend itself to adhesion to PTFE.

U.S. Patent No. 3,215,442 (Papenguth) does not teach, suggest, or motivate a stiffening ring fixed to a base ring. Assuming *arguendo* that ring 40 of Papenguth is in some way

analogous to the stiffening ring recited in Claim 2, Papenguth teaches that the ring and packing are separate. For example, in Figure 9, the ring and packing are interfaced by rib 42 of the packing and groove 43 of the ring (col. 4, lines 22-27).

Assuming *arguendo* that inner ring 60 in Figure 7 of U.S. Patent No. 3,195,906 (Moyers) is in some way analogous to the stiffening ring recited in Claim 2, Moyer teaches that the ring is not fixed to the sealing ring. For example, a rib and groove arrangement is used in Figure 7.

For all the reasons noted *supra*, the cited prior art fails to teach, suggest, or motivate all the elements of Claim 2; therefore, Claim 2 is patentable over the cited prior art. Claims 3, 4, 9, 13, and 15 dependent from Claim 2, enjoy the same distinction with respect to the cited prior art.

#### **Claim 28**

Claim 28, dependent from Claim 2, recites: “further comprising an adhesive layer joining the stiffening ring to the base ring; or wherein the stiffening ring is vulcanized into the base ring (2) or wherein the stiffening ring is joined to the base ring by injection molding.”

As noted *supra*, the prior art teaches against the Claim 2 recitation: “wherein the stiffening ring is joined to the inner circumferential edge of the base ring (2) or the outer circumferential edge of the base ring (2) in a firm or form-locking manner” Claim 28 narrows the Claim 2 limitations regarding joining the base ring and the stiffening ring; therefore, the prior art also teaches against the limitations of Claim 28.

#### **Claim 29**

Claim 29, dependent from Claim 2, recites: “wherein the protective layer is joined to the base ring.” There is no teaching in Reid or Sheesley to join a protective layer, present over all but an outer circumferential edge of the base ring, to the base ring. In fact, Sheesley does not teach a protective layer. Assuming *arguendo* that other previously cited prior art, such as Hobson, otherwise teaches the protective layer recited in Claim 2, Hobson fails to teach joining the layer to the base ring. Other previously cited prior art, such as Papenguth; U.S. Patent 3,195,906 (Moyers); and U.S. Patent 3,355,181 (Olson) either fail to teach a protective layer or fail to teach a protective layer covering all but the outer circumference of the base ring as recited in Claim 2.

Claims 7, 8, 11, and 12 have been cancelled.

**Claims 23-25**

Claims 23-25 each recite the configuration noted above for Claim 2, that is, a stiffening ring disposed along the inner circumferential edge of the base ring and joined to the base ring. Therefore, the arguments presented for Claim 2 are applicable to Claim 23-25 and Claims 23-25 are patentable over the cited prior art.

**Claims 26 and 27**

Claims 26 and 27 have been cancelled.

Applicants courteously request that the rejection be removed.

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**Conclusion**

Applicants respectfully submit that all pending claims are now in condition for allowance, which action is courteously requested. The Examiner is invited and encouraged to contact the undersigned agent of record if such contact will facilitate an efficient examination and allowance of the application.

Respectfully submitted,

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